

Patent Claims

1. Steering handle, in particular steering wheel, for motor vehicles, characterized in that means for determining a contact between at least one hand of the driver and the steering handle (free hand recognition) are provided.
2. Steering handle, in particular steering wheel, for motor vehicles according to claim 1, characterized in that the free hand recognition is realized by means of one or more electrically conducting metal elements arranged in the steering handle.
3. Steering handle, in particular steering wheel, for motor vehicles according to claim 1 or 2, characterized in that the steering handle is provided with a capacitive free hand recognition.
4. Steering handle, in particular steering wheel, for motor vehicles according to any one of the claims 1 to 3, characterized in that the steering handle is provided with at least one electrode arranged under a coat and interacting with a fastening element of the steering handle.
5. Steering handle, in particular steering wheel, for motor vehicles according to any one of the claims 1 to 4, characterized in that in case of capacitive free hand recognition the damping is recorded which is caused when

the driver acts upon the steering handle.

6. Steering handle, in particular steering wheel, for motor vehicles according to any one of claims 1 to 5, characterized in that the free hand recognition is realized by means of one or more pressure-resistant piezoelectric elements arranged in the steering handle.
7. Steering handle, in particular steering wheel, for motor vehicles according to any one of the claims 1 to 6, characterized in that the free hand recognition is realized by means of one or more strain gauges arranged on a metal strip in the steering handle.
8. Steering handle, in particular steering wheel, for motor vehicles according to any one of claims 1 to 7, characterized in that the piezoelectric elements are arranged in pairs around the steering handle, preferably in segments.
9. Steering handle, in particular steering wheel, for motor vehicles according to any one of claims 1 to 8, characterized in that the free hand recognition is realized by determining the deflection of the steering column.
10. Steering handle, in particular steering wheel, for motor vehicles according to any one of the claims 1 to 9, characterized in that the free hand recognition is realized by means of one or more waves or oscillations of or on the steering handle.

11. Steering handle, in particular steering wheel, for motor vehicles according to any one of the claims 1 to 10, characterized in that the waves are optical waves.
12. Steering handle, in particular steering wheel, for motor vehicles according to any one of the claims 1 to 11, characterized in that the waves are surface waves.
13. Steering handle, in particular steering wheel, for motor vehicles according to any one of the claims 1 to 12, characterized in that the damping of the wave or waves is recorded which are caused by the driver acting upon the steering handle.
14. Steering handle, in particular steering wheel, for motor vehicles according to any one of claims 1 to 13, characterized in that the free hand recognition is realized by determining the electrical conductivity of the surface of the steering handle.
15. Steering handle, in particular steering wheel, for motor vehicles according to any one of claims 1 to 14, characterized in that the free hand recognition is realized by measuring the temperature of the surface of the steering handle.
16. Steering handle, in particular steering wheel, for motor vehicles according to any one of the claims 1 to 15, characterized in that the steering handle is provided with a heating and that at least one metal component of the heating is interacting with the free hand

recognition.

17. Steering handle, in particular steering wheel, for motor vehicles according to any one of the claims 1 to 16, characterized in that a heating filament or a heating foil is used as an electrode for a capacitive free hand recognition.
18. Steering handle, in particular steering wheel, for motor vehicles according to any one of the claims 1 to 17, characterized in that the heating is powered with direct voltage and the free hand recognition with a high-frequency alternating voltage and that the electrical connection of the heating with the vehicle mass is galvanically separated.
19. Method for recording a physical parameter on a steering handle, characterized in that the change of the physical parameter, in particular its damping, is recorded which is caused by the driver acting upon the steering handle.
20. Steer-by-wire steering system for a motor vehicle, characterized in that it is provided with a steering handle according to any one of the preceding claims.
21. Steering system for a motor vehicle on which a steering torque is actively applied (IPAS), characterized in that it is provided with a steering handle according to any one of the preceding claims.